Fetal extraction manoeuvres during second stage of labor cesarean delivery
Krispin E, Fischer O, Kelner M, Arbib N, Salman L, Wiznitzer A, Hadar E
Helen Schneider Hospital for Women, Rabin Medical Center, Petach Tikva, Israel; Department of Obstetrics and Gynecology, Sheba Medical Center, Tel-Hashomer, Israel; Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel, Tel Aviv, Israel

Objective
To compare maternal and neonatal outcomes following cesarean delivery during second stage of labor, according to fetal extraction method.

Methods
Retrospective cohort study of all women who underwent term cesarean delivery during the second stage of labor at a university affiliated tertiary medical center (2007-2016). The cohort was divided according to three extraction methods: standard vertex extraction, the push method in which the head extraction is accompanied by pushing through the vagina and the reverse breech extraction method. Primary outcomes were intraoperative maternal complications and secondary outcomes were neonatal adverse events. Univariate statistical analysis was followed by a logistic regression utilized to adjust major maternal and neonatal complications to extraction method, indication for cesarean and vertex station.

Results
350 women were included, of whom 206 (59%) underwent standard vertex fetal extraction, 116 (33%) the push method extraction, and 28 (8%) reverse breech extraction. Operation time was significantly shorter in the standard vertex extraction method compared to push and reverse breech extraction methods (33.5 vs. 40.5 and 39.0 min, respectively, p=0.013). Uterine laceration and incision extension frequencies were lower in the vertex extraction method (24.76% vs. 45.69-46.40% in others, p<0.001). Delivery related neonatal injury was significantly more frequent in the reverse breech extraction method (39.29% vs. 12-15% in others, p<0.001). In a multivariate analysis reverse breech extraction was associated with higher rates of uterine laceration and incision extension (OR=2.739 95% confidence interval 1.44-6.56, p=0.0237) and delivery related neonatal injury (OR=2.837, 95% CI 1.081-7.448, p=0.0342).

Conclusion
Standard vertex extraction method during second stage of labor cesarean delivery is safer both to the mother and neonate when compared to alternative extraction methods.